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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,116	12/01/2003	Rahul Magoon	26169-103-401	9927
29899	7590	06/08/2005	EXAMINER	
WILLIAM J. KOLEGRAFF 3119 TURNBERRY WAY JAMUL, CA 91935			BAYARD, EMMANUEL	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/724,116	<b>Applicant(s)</b> MAGOON ET AL.	
	<b>Examiner</b> Emmanuel Bayard	<b>Art Unit</b> 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is in response to amendment filed on 1/10/05 in which claims 1-28 are pending. The applicant's amendments have been fully considered but they are moot based on a new ground of rejection

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shattil U.S. patent No 6,686,879 B2 in view of Leonowich U.S. Patent No 5,463,337.

As per claims 1, 10 and 19, Shattil et al disclose a method of generating at least two modulation signals from a local oscillator signal for quadrature sub-harmonic modulation of a quadrature amplitude modulated information signal (see col.35, lines 20-22), such method comprising the steps of: delaying (see fig.73d element 878 and col.17, lines 35-67) a signal generator oscillator is the same as the claimed (local oscillator signal) (see fig.73 element 2402i and col.69, line 55-67 and col.70, lines 1-3) in a plurality of incremental delay at least two sets of modulator signals, one of said sets of modulator signals together forming the first modulation signal (see fig.73d element 611) and another of said sets forming the second modulation signal (see fig.73d element 611) for quadrature sub-harmonic modulation of the quadrature amplitude modulated information signal.

However Shattil controlling a magnitude of the incremental delays based upon a predetermined phase offset between the local oscillator signal and a last delay step of the incremental delay steps.

Leonowich teaches delaying the local oscillator in a plurality of incremental delay steps to form and controlling a magnitude of the incremental delays based upon a predetermined phase offset between the local oscillator signal and a last delay step of the incremental delay steps (see figs.4 and 6 elements 406a-406e and col.4, lines 50-55 and col.5, lines 10-35 and col.6, lines 18-33)

It would have been obvious to one of ordinary skill in the art to incorporate the teaching of Leonowich into Shattil as to synchronize the phase reference signal with the phase of the routed delayed signal as taught by Leonowich (see abstract).

As per claims 2, 11 and 20, Shattil does include the first modulation signal as a real part of the quadrature sub harmonic modulation signal (see fig.73d element 611).

As per claims 3, 12 and 21, Shattil does include the second modulation signal as an imaginary part of the quadrature sub harmonic modulation signal (see fig.73d element 611).

As per claims 4, 13 and 22 Shattil and Leonowich would include the delay of each delay step as substantially equal to ninety degrees divided by a modulator multiplier value as to synchronize the phase reference signal with the phase of the routed delayed signal as taught by Leonowich (see abstract).

As per claims 5, 14 and 23, Shattil and Leonowich would include the first and second modulation signals as having a number of respective odd and even members

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equal to two times the modulator multiplier value as to synchronize the phase reference signal with the phase of the routed delayed signal as taught by Leonowich (see abstract).

As per claims 6, 15 and 24 Shattil and Leonowich would include a first incremental delay step as equal to zero degrees as to synchronize the phase reference signal with the phase of the routed delayed signal as taught by Leonowich (see abstract).

As per claims 7, 16 and 25 Shattil and Leonowich would include defining a second incremental delay step as equal to forth-five degrees as to synchronize the phase reference signal with the phase of the routed delayed signal as taught by Leonowich (see abstract).

As per claims 8, 9, 17, 18 and 26-27, Shattil and Leonowich would include defining a third incremental odd delay step as equal to ninety degrees as to produce consistent incremental delays in order to avoid use of amplifiers which could cause current spikes

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by Sempel et al U.S. patent No 6,324,233 B1.

As per claim 28, Sempel et al teaches a method of providing first and delayed second modulator signals for modulation of a quadrature amplitude modulated signal, such method comprising the steps of: a phase detector is the same as the claimed (detecting a phase difference) (see fig.4 element PHD and col.5, lines 9-10) relating the first and second modulator signals (see fig.4 elements MIXI, MIXQ and col.5, lines 20-26); filtering (see fig.4 element LPF and col.5, lines 9-10) the detected phase difference; a vco is the same as the claimed (adjusting) (see fig.4 element vco and col.5, lines 9-10) the phase difference between the first and second modulator signal based upon the filtered, detected phase difference to a phase difference value equal to ninety degrees divided by a modulator multiplier value for quadrature sub harmonic modulation of the quadrature amplitude modulated signal.

### ***Double Patenting***

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1-27 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-27 of prior U.S. Patent No. 6,658,066 B1. This is a double patenting rejection.

**Conclusion**

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee et al U.S. Patent No 6,512,408 B2 teaches a mixer circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM)  
Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

6/6/05

Emmanuel Bayard  
Primary Examiner  
Art Unit 2631

**EMMANUEL BAYARD**  
**PRIMARY EXAMINER**